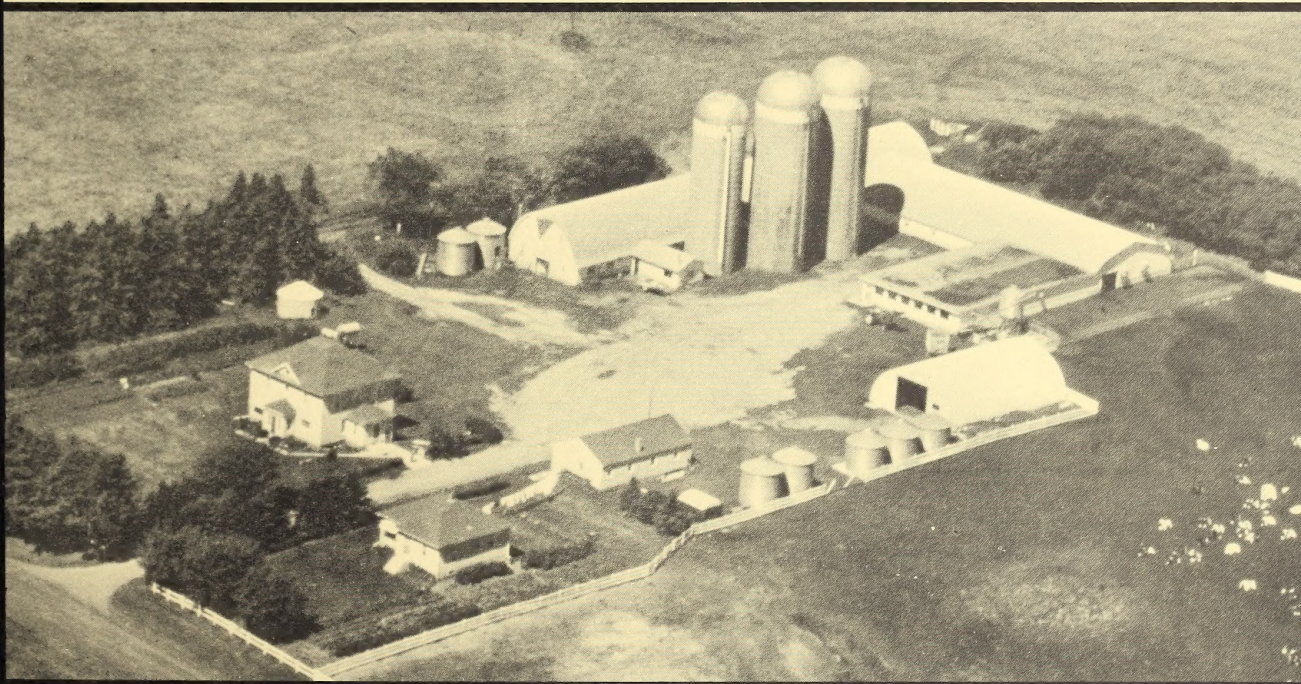


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# analysing a farm business



**Alberta**  
AGRICULTURE

Farm Business Management Branch  
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## ANALYZING A FARM BUSINESS

First Edition, September 1976 prepared by P.D. Jensen and G.R. Keay

Revised November, 1983 by James Obniawka and Craig Edwards

### FARM RECORDS AND ANALYSIS SECTION

**Alberta**

AGRICULTURE  
FARM BUSINESS MANAGEMENT BRANCH

## FOREWORD

Land, labor, capital and management are the productive factors at the disposal of farm managers in operating their farms. The wide variation between farms in the amount and quality of resources utilized is reflected in wide differences in levels of income achieved by farmers. Improvement in the quality of the management factor provides potential for greater income and satisfaction from the combination of the other resources employed.

This publication, Analyzing a Farm Business, is designed to assist in improving the management factor. The identification of income limiting factors in a business is the first step toward overcoming that limitation.

Analyzing a Farm Business has been prepared to be useful with the wide range of recording systems utilized by producers; from basic income tax records to complete management reports; from account books to computerized systems. In addition, much of the necessary information can be obtained from the producer's experience.

This publication was originally prepared by P.D. Jensen, former Supervisor, Records and Analysis Section, and G.R. Keay, former Head, Field Services Branch. It was revised by James Obniawka and Craig Edwards under the supervision of Ron Cuthbert, Supervisor of Records and Analysis Section of Alberta Agriculture's Farm Business Management Branch.

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Head  
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Olds, Alberta

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## INTRODUCTION

Do you want to know the strong and weak areas in your farm business? Do you wonder how you compare to other farmers in your area?

This publication is intended to identify some of the strengths and weaknesses of a farm business. It may be useful for identifying problem areas or areas in which improvement can be made.

This publication is set out in separate sections, each section carrying on from the previous one. They take the order one has to follow to find a strength or a problem in a farm business. Once they have been identified, plans can be made to build on strengths or to correct weaknesses.

Section 1 deals with net farm income, including cash and accrual systems for recording income. The accrual provides a more complete picture of how the farm progressed during the year.

Section 2 gives guidelines for converting a tax statement into an accrual system.

Net farm income has to pay for several things. Section 3 discusses some of these and can show if net farm income is sufficient to cover them.

Section 4 deals with assets and debts (what you own and what you owe). There are important relationships between assets and debts which are covered in this section.


The level of net farm income is affected by many factors. Some of these factors include quality of produce, marketing ability, productivity of the land or livestock, and size of the operation. All these factors are examined in some detail in Section 5. Some provincial averages are provided so you can compare results to other farms in the province.

Section 6 analyzes costs and how they affect the profit of the operation. Perhaps your costs are too high or you are spending too much in one area of your operation. Average costs are also provided for comparison.

These sections should enable you to have a close look at your farm business.

IF YOU HAVE ANY QUESTIONS, PLEASE CONTACT YOUR DISTRICT AGRICULTURIST, REGIONAL FARM ECONOMIST, OR FARM BUSINESS MANAGEMENT BRANCH.

Ronald H. Cuthbert  
Supervisor, Farm Records & Analysis Section  
Farm Business Management Branch



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## SECTION 1: FARM BUSINESS ANALYSIS FRAMEWORK

The level of net farm income can be considered as the final overall indicator of the success of a farm's operation.

Net farm income is the income left after operating and depreciation costs are subtracted from the value of production. Value of production consists of two factors: price multiplied by quantity. The price received for a product is influenced by quality and marketing. Quantity is directly related to productivity and size.

Net farm income should cover family living expenses, loan principal payments and provide for new investment and income tax. This involves financial management.

A critical problem exists if the net farm income is insufficient to support the operator and his family and if off-farm employment does not account for the discrepancy between what a family unit needs and what it has.

All of the above are illustrated on the following chart.

In order to analyze net farm income, sections 2 and 6 are included. Section 2 shows how to develop a net farm Income statement from a cash tax return, an account book or computerized record system. Section 3 shows where net farm income is used. Section 4 follows this and involves financial management. Section 5 analyzes the components that make up value of production. Section 6 does the same for costs. It is important to note that any section from 3 to 6 (or any part of any section) may point out where the operation may be going wrong. IT WILL PROBABLY NOT BE NECESSARY TO USE ALL SECTIONS.

# FARM BUSINESS ANALYSIS FRAMEWORK

1.1

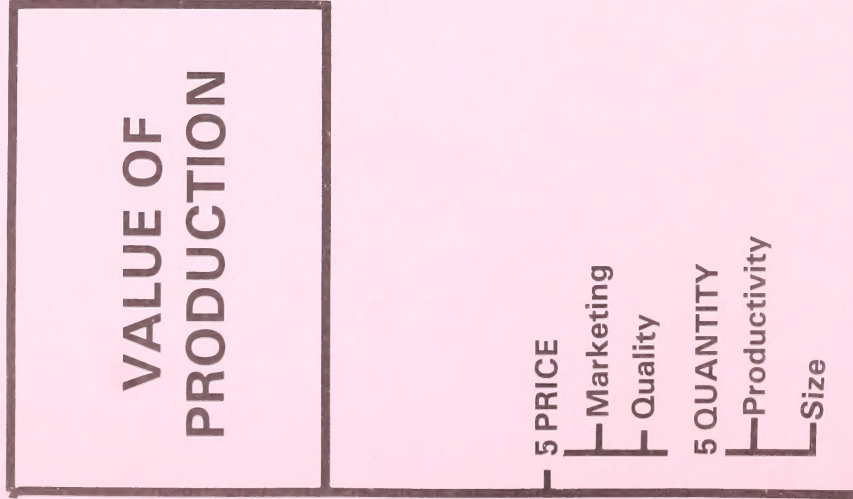
VALUE OF PRODUCTION

MINUS

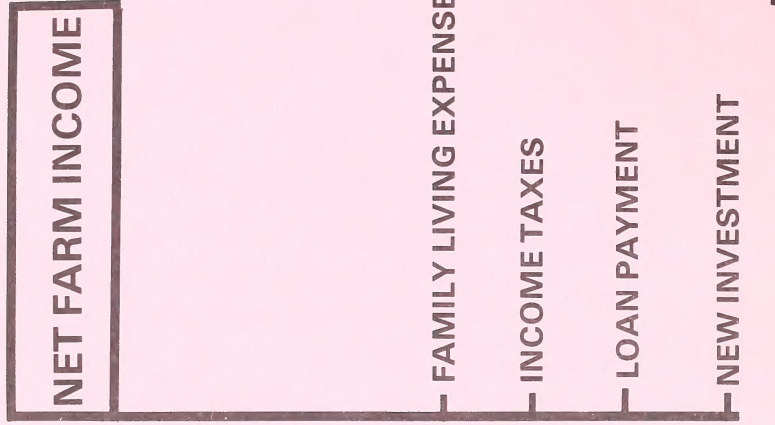
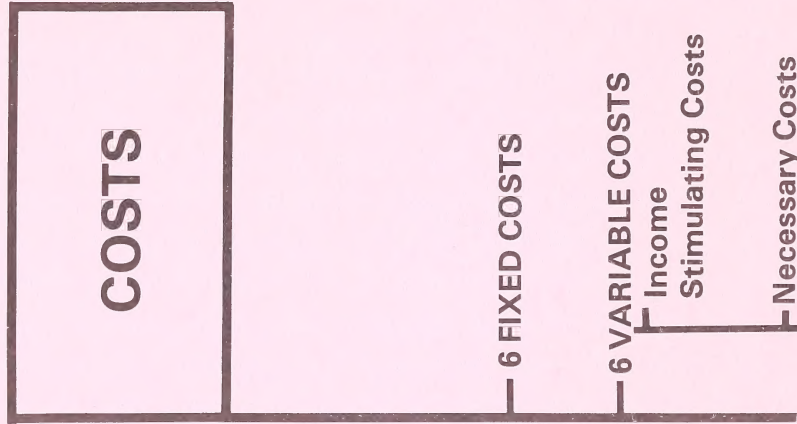
COSTS

EQUALS

NET FARM INCOME



INFLUENCING FACTORS



## SECTION 2: DEVELOPMENT OF A NET FARM INCOME STATEMENT FROM A TAX RETURN (CASH)

The purpose of this section is to produce an accrual statement of income and expenses for the year from a cash tax statement. An accrual statement shows all income generated in a given period (whether received in cash or not) as well as all expenses incurred (whether paid in cash or not). The object from a management viewpoint is a profit picture on the operations of the fiscal period in question.

Remember that this is a managerial related net farm income statement and should not be confused with a financial statement prepared to determine annual income for tax purposes based on an accrual method.

Pages 2.1 and 2.2 show information from the records of an example farm. From this information we use a worksheet (pages 2.3 to 2.5) to include all the items of income and expense we must consider and calculate to develop an accrual net income statement.

An explanation of the items of income and expense used in the worksheet is provided on pages 2.6 - 2.9. Pages 2.10, 2.11 and 2.12 are a worksheet for you to use in calculating your own accrual net income.




 Revenue Canada  
Taxation

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Impôt

# STATEMENT OF FARMING INCOME AND EXPENSES

 T2042  
REV 82

NAME \_\_\_\_\_ ADDRESS \_\_\_\_\_

 For the Period JANUARY 1 1982 to DECEMBER 31 1982 Is this your first year of farming? YES ☐ NO ☒ *Tick applicable box.*

• A separate statement is required for each business.

• Include the total income and expenses of a partnership.

 Is this your last year of farming? YES ☐ NO ☒

EXPENSES (FOR FARM OPERATION ONLY)		Code \$	Total Acreage <u>800</u>	Total Cultivated Acreage <u>480</u>
Salaries and Wages Paid to Spouse	195		<b>INCOME</b>	(Quantity) Code \$
Other Salaries and Wages	200		Crops and Seeds - All Wheat	<u>3,000 bu.</u> 400 <u>13,950</u> -
C.P.P. ** or Q.P.P. *** Contribution for Employees.			Oats	401
Unemployment Insurance, Workmen's			Barley	<u>11,500 bu.</u> 402 <u>22,425</u> -
Compensation	201		Rye	403
Rent (land, buildings, pasture)	205	<u>1,800</u> -	Flaxseed	404
Interest on Real Estate Mortgage	210	<u>18,407</u> -	Rapeseed (Canola)	405
Interest - Other	211	<u>3,484</u> -	Soybeans	406
Property Taxes	215	<u>1,440</u> -	Corn	407
Machinery and Truck Expenses:			Apples	408
- Gasoline, Diesel and Oil	220		Other Fruits	409
- Repairs, Licenses, Insurance	221	<u>10,790</u> -	Potatoes	410
Automobile Expenses (FARM SHARE):			Vegetables	411
- Gasoline and Oil	225		Tobacco	412
- Repairs, Licenses, Insurance	226		Sugar Beets	413
Fertilizers and Lime	230	<u>5,370</u>	<u>Hay Other Crops</u> 100 T 414 <u>6,000</u> -	
Sprays and Other Chemicals	235	<u>1,750</u>	Canadian Wheat Board Payments - Wheat	420
Seeds and Plants	240	<u>2,250</u>	<del>Other</del> 421 <u>2,400</u> -	
Livestock Purchased - Cattle	245		Barley	422
- Swine	246		Canadian Wheat Board Cash Advances	425
- Poultry	247		Western Grain Stabilization Payments	430
- Horses, Sheep, Other	248		Forage Crops (include forage seed)	435
Feed and Straw	250	<u>100</u> -	Livestock Sold - Cattle (number)	<u>72</u> 440 <u>24,757</u> -
Veterinary Fees, Medicine and Breeding Fees	255	<u>600</u> -	- Swine	441
Building Repairs	260	<u>2,150</u> -	- Poultry	442
Fence Repairs	261		- Horses, Sheep,	
Containers, Twine and Baling Wire	265		Lambs, Other	443
Small Tools and Other Miscellaneous Supplies	270		Eggs	445
Insurance - Buildings, Crops, Livestock	275	<u>2,950</u> -	Milk and Cream	450
Accounting, Legal, Office, Advertising,			Dairy Subsidies	455
Memberships, Subscriptions	280	<u>500</u> -	Bees, Honey	460
Telephone (FARM SHARE)	285		Maple Products	465
Electricity (FARM SHARE)	290	<u>2,500</u> -	Wood (include stumpage fees)	470
Heating Fuel (FARM SHARE)	295		Custom and Contract Work and Machine Rental	475
Custom and Contract Work and Machine Rental	300		Patronage Dividends	480
Freight and Trucking	305	<u>1,000</u> -	Gasoline Tax Rebates	485
Clearing or Improving Land	310		Insurance Proceeds: Loss of Crops <input type="checkbox"/>	
Canadian Wheat Board Advances (Repayment)	315		Livestock <input type="checkbox"/> Other <input type="checkbox"/>	490
Irrigation/Drainage	316		Other Subsidies (specify)	495
Other Expenses (specify) <u>LIVESTOCK</u>	320	<u>800</u> -		496
	321		Other Farm Income, excluding Rental Income	
	322		(specify)	500
Optional Value of Livestock, end of previous year	325			501
Capital Cost Allowance (from attached schedule)	330	<u>16,800</u> -	Optional Value of Livestock, end of current year	505 <u>23,079</u> -
Allowance on Eligible Capital Property Account	331		<b>Gross Farm Income</b>	
<b>Total Farm Expenses</b>	335	<u>78,691</u> -	(enter on page 1 of your return)	510 <u>92,611</u> -
(deduct from Gross Farm Income)			Deduct Total Farm Expenses	515 <u>78,691</u> -
			<b>Excess of Income over Expenses</b>	
			(enter this amount below under	
			Adjustments to Income)	520 <u>13,920</u> -

## Adjustments to Income

Add (a) salary or wages paid to self and partner(s) and interest on capital if included in expenses	605	
(b) non-allowable expenses such as donations (deductible on page 2 of your return) if included in expenses	610	
(c) cost of saleable products consumed	615	
(d) personal or non-business portion of automobile or other expenses included above	620	
<b>Net Income from Farming</b> (If a proprietorship, enter this amount on page 1 of your return)	625	

IF THIS OPERATION IS A PARTNERSHIP, ALSO COMPLETE THE PARTNERSHIP STATEMENT ATTACHED

NON-FARM INCOME, SUCH AS RENTAL INCOME AND RELATED EXPENSES SHOULD BE REPORTED ON A SEPARATE STATEMENT

(see page 5 Farmer's Guide)

Use of Livestock Inventory Provision

With \$16,800 C.C.A. expenses total	\$ 78,691
Subtract Gross Income of Operating Loss	69,532
	<u>9,159</u>
PLUS Married Exemption	6,670
I.T.C. of \$1,050 ÷ .2	5,250
Tax Free Zone	<u>2,000</u>
	\$ 23,079

Could add \$23,079 L.I.P. and pay no tax. This addition would produce an excess of income over expenses of \$13,920.

Inventory Transactions

Inventory Item	Beginning Inventory	Prod'n Debit Purchases	Tr Out	Sales	Tr In	Feed /Seed	Ending Inventory
Wheat	1500 bu	3000		3000		47	1453
Barley	5000 bu	12500		11500		1003	4997
Rape	0 bu	0		0			0
Hay	110 T	260		100		138	132
Cull cows	0 hd			13	13		0
Cows	100 hd		15		15		100
Hfr calves	0 hd	37	15	22			0
Str calves	0 hd	37	0	37			0
Feeder strs	0 hd	0		0	0		0
Feeder hfrs	0	0		0	0		0
Repl. hfrs	15 hd		15		15		15
Bulls	3 hd						3

Inventory of Crops & Livestock

Jan '82 - Dec '82

Inventory Item	Beginning Inventory			Ending Inventory		
	Quantity	Price	Total	Quantity	Price	Total
Wheat	1500	4.80	7200	1453	4.80	6975
Barley	5000	2.00	10000	4997	2.00	9994
Rape	0	0.00	0	0	0.00	0
Hay	110	60.00	6600	132	60.00	7920
Cull cows	0	400.00	0	0	400.00	0
Cows	100	800.00	80000	100	800.00	80000
Feeder strs	0	0.00	0	0	0.00	0
Feeder hfrs	0	0.00	0	0	0.00	0
Repl. hfrs	15	500.00	7500	15	500.00	7500
Bulls	3	2000.00	6000	3	2000.00	6000

-----  
TOTAL 117300

118389

Change in inventory

1089

Note re: Inventory

Inventories are recorded at a constant dollar value; the same value for the beginning and end of year. If the current price at the end of the year were \$5.00 for wheat and \$3.00 for barley, you should not use them for valuation of your ending inventory; use the original values. Current market values can be recorded for the beginning of next year (changed from Dec. 31, 1982 to Jan. 1, 1983). See Item #7 on page 2.6.

DEVELOPING NET FARM INCOME

Indicate a negative net change by enclosing numbers in brackets (xxx).

PART ONE: DEVELOPING TOTAL ACCRUED INCOME

1) <u>GROSS CASH INCOME</u> (from income tax statement)		<u>92,611</u>
2) <u>FINAL PAYMENTS ON PRODUCTS SOLD</u>		
LESS: Final payments received on last year's production	<u>2,400</u>	
PLUS: Anticipated final paym'ts on this year's production	<u>2,400</u>	
NET CHANGE THIS ADJUSTMENT		<u>-0-</u>
3) <u>DEFERRED CASH PURCHASE TICKETS</u>		
PLUS: Tickets deferred to next year	_____	
LESS: Tickets deferred from last year	_____	
NET CHANGE THIS ADJUSTMENT		<u>-0-</u>
4) <u>CASH ADVANCES ON INVENTORY</u>		
LESS: Advances Received	_____	
PLUS: Advances Repaid	_____	
NET CHANGE THIS ADJUSTMENT		<u>-0-</u>
5) <u>OPTIONAL VALUE OF LIVESTOCK, END OF CURRENT YEAR</u>		
Less Value of livestock from current year included in income		<u>(23,079)</u>
6) <u>ACCOUNTS RECEIVABLE</u>		
LESS: Beginning Accounts Receivable	_____	
PLUS: Ending Accounts Receivable	_____	
NET CHANGE THIS ADJUSTMENT		_____
7) <u>INVENTORY CHANGES</u>		
Crops: LESS: Beginning Inventory	<u>23,800</u>	
PLUS: Ending Inventory	<u>24,889</u>	
Livestock: LESS: Beginning Inventory	<u>93,500</u>	
PLUS: Ending Inventory	<u>93,500</u>	
NET CHANGE THIS ADJUSTMENT		<u>1,089</u>
8) <u>LIVESTOCK</u>		
LESS: Livestock Purchased	<u>-0-</u>	
Total of ADJUSTMENTS (2 to 8)		
NET CHANGE THIS ADJUSTMENT		_____
9) <u>GROSS PROFIT (VALUE OF FARM PRODUCTION</u>		
(Gross cash income with adjustments 2 to 8)		<u>70,621</u>



PART TWO: DETERMINING TOTAL ACCRUED  
EXPENSES

10) <u>TOTAL EXPENSES</u> (from tax return)			<u>78,691</u>
11) <u>OPTIONAL VALUE OF LIVESTOCK, END OF PREVIOUS YEAR</u>			
<u>LESS:</u> Value of livestock from previous year included in expense		<u>-</u>	
12) <u>ACCOUNTS PAYABLE</u>			
<u>LESS:</u> Beginning Accounts Payable		<u>          </u>	
<u>PLUS:</u> Ending Accounts Payable		<u>          </u>	
NET CHANGE THIS ADJUSTMENT			<u>          </u>
13) <u>SUPPLIES INVENTORY CHANGES</u>			
<u>PLUS:</u> Beginning Inventory		<u>          </u>	
<u>LESS:</u> Ending Inventory		<u>          </u>	
NET CHANGE THIS ADJUSTMENT			<u>          </u>
14) <u>LIVESTOCK</u>			
<u>LESS:</u> Livestock Purchased		<u>          </u>	
NET CHANGE THIS ADJUSTMENT			<u>          </u>
15) <u>CLEARING AND LAND IMPROVEMENTS</u>			
<u>LESS:</u> C.L.I. Total Cost		<u>          </u>	
<u>PLUS:</u> C.L.I. Amount Allowance		<u>          </u>	
NET CHANGE THIS ADJUSTMENT			<u>          </u>
16) <u>DEPRECIATION</u>			
<u>LESS:</u> Capital Cost Allowance		<u>16,800</u>	
<u>PLUS:</u> Management Depreciation		<u>16,558</u>	
NET CHANGE THIS ADJUSTMENT			<u>(242)</u>
17) <u>TOTAL ACCRUED EXPENSES</u>			
(Total expenses from tax return net of adjust- ments 11 - 16)			<u>78,449</u>

PART THREE: DEVELOPING NET INCOME

18) <u>GROSS PROFIT (VALUE OF FARM PRODUCTION)</u>	(Item #9)	<u>70,621</u>
19) <u>VARIABLE EXPENSES</u> (Complete Item #21 first)		
PLUS: Total Accrued Expenses (#17)	<u>78,449</u>	
LESS: Total Fixed Expenses (#21)	<u>42,039</u>	
TOTAL VARIABLE EXPENSES		<u>36,410</u>
20) <u>CONTRIBUTION MARGIN</u> (Value of Farm Production minus Variable Expenses)		<u>34,211</u>
21) <u>FIXED EXPENSES</u>		
Property Taxes	<u>1,440</u>	
Interest on Term Loans	<u>18,407</u>	
Other	<u>3,484</u>	
Building		
Repairs & Maintenance	<u>2,150</u>	
Improvements		
Management Depreciation	<u>16,558</u>	
TOTAL FIXED EXPENSES		<u>42,039</u>
22) <u>NET FARM INCOME</u> (Contribution Margin less Fixed Expenses or Value of Farm Production less Total Accrued Expenses)		<u>(7,828)</u>

The contribution margin is calculated here to show how the figures are derived. It could be a useful measure as shown here if the whole farm were only one enterprise such as wheat only or finished hogs only. In this example where three different crops are grown and a cow-calf enterprise is also operated, the contribution margin only shows a total for the different enterprises which is not very useful for analysis. To be useful, the variable costs must be allocated to the different crops and the cow-calf operation, and the contribution margins calculated separately. Section Six explains the method in more detail.

## Notes to Developing Net Farm Income Statement

### Item #

- 2) FINAL PAYMENTS ON PRODUCTS SOLD: the object is to use available markets and price information to establish a fair final price for products sold in the current year, and to subtract out cash received from products sold in the previous fiscal period.
- 3) DEFERRED CASH PURCHASE TICKETS: a tax provision for some income categories to allow the operator to defer income to the next tax year. For net income purposes these transactions must be neutralized.
- 4) CASH ADVANCES ON INVENTORY: as in the case of the Canadian Wheat Board a producer may receive a cash advance on products held in inventory. To avoid double counting of products still held in inventory, these transactions must be neutralized.
- 5,11) OPTIONAL VALUE OF LIVESTOCK, END OF CURRENT YEAR AND END OF PREVIOUS YEAR: this is specifically a tax related provision and all references must be removed to calculate Net Farm Income.
- 6,12) ACCOUNTS PAYABLE/RECEIVABLE: this adjustment takes into the current Net Farm Income picture all items of income and expense pertaining to the current fiscal period, and removes references to any other period.
- 7,13) INVENTORY CHANGES: the adjustment has the effect of including into Net Farm Income a value based on net inventory changes. Analysis of income can then include products produced and still in inventory as well as those sold. The adjustment of supplies inventories causes a placing into net income of inputs purchased but not used (or conversely carried over from the previous period). Note: in calculating inventories of supplies it is important to include fertilizer spread in the fall for both ends of the fiscal year so that Net Farm Income reflects the appropriate input costs. It is important to record inventories at a constant dollar value; the same value per unit being used at the beginning of the year as at the end of the year.



8,14) Livestock Purchased

A. Nonbreeding Livestock such as feeder cattle or feeder pigs that are purchased or produced for sale.

If Gross Cash Income (Item #1) includes the sale of non-breeding animals, you should deduct the amount paid for all non-breeding animals that are recorded as purchased in cash expenses of the income tax statement. This is done because the purchased animals value overstates the income from production which we want to determine. To make the necessary adjustments, deduct the amount of purchase in Item #8 and also in Item #14, where until the amount is deducted, the expenses have been overstated by the amount of the purchase of animals.

B. Breeding Livestock (defined as animals purchased or produced to be kept in breeding herd of the farm we are analyzing).

Canadian income tax regulations allow a farmer to charge as an expense for the fiscal year cash purchases of any type of livestock including breeding livestock. We can expect to see as a legitimate expense in the income tax statement of farming income and expense, the amount paid for purchase of breeding stock. The cash expenses for production will be overstated by the amount paid for purchase of breeding stock so Item #14 allows adjustment for this situation. The amount paid for purchase of breeding stock must be deducted in Item #14 on the worksheet.

Complementary to the above situation the sale of all livestock, including breeding stock is included in the income tax statement of farm income and expense. Our goal is to calculate Net Farm Income on an accrual system by first calculating value of farm production for the period and then deducting the total accrued expenses incurred for the period to arrive at Net Farm Income from operations or production. As the sale of breeding stock is not necessarily income from operations or we must consider if adjustments to cash income are necessary. Breeding stock could be placed in the category of fixed assets in an accounting system in accordance with generally accepted accounting principles so we must consider adjustments to our original statement of cash income to compensate for this situation.

We can consider the sale of breeding herd livestock in two different accounting applications

1. As a disposal of fixed assets
2. As a normal part of the production cycle selling of items produced

Applying the first method we would deduct all the cash income derived from sale of fixed assets (the amount of income from selling the animals) to adjust the cash income in Item #8.

If we chose to use the second method we would consider the sale of a certain number of breeding herd animals each year as a part of normal income and make no deductions, unless a larger amount than normal would be sold in an extraordinary transaction. If an extraordinary transaction had happened, the amount of cash income higher than normal would be deducted in item #8 to reflect the amount that income from operations is overstated.

- 9) GROSS PROFIT (VALUE OF PRODUCTION): states the total physical production of the farm in dollar terms. It is the sum of the contributions of all the enterprises on the farm attributed to one production period.
  
- 15) CLEARING & LAND IMPROVEMENTS: some expenses in this area are allowed into current expenses for tax purposes but should for management purposes be spread over several years.
  
- 16) DEPRECIATION: this is a discretionary area. Capital Cost Allowance may approximate management depreciation. If so, no change is necessary. However, Capital Cost Allowance is based on a set of legislated maxima and may differ from reality - on the upside or downside depending on i) the level of farm income in a given year which will determine whether the maximum or any CCA was applied, and ii) the age and condition of the depreciable assets on the farm.
  
- 19, VARIABLE EXPENSES, FIXED EXPENSES, CONTRIBUTION MARGIN: the ability to
- 20) analyze income is contingent on knowledge of several factors comprising it:
  - i) what level of revenue
  - ii) what configuration of fixed/variable expenses
  - iii) what profit margin
 Decisions are made regarding:
  - i) expenses - can they be reduced, can they be made variable, are they in balance for the farm?
  - ii) Revenue - is the unit generating optimum income for its enterprise and size
  - iii) which enterprise is the money maker
  - iv) in an anticipated loss situation - is there enough information to determine whether or not to shut down

The Contribution Margin is a value used to achieve two potential ends:

- i) in a multi-enterprise operation variable costs are sorted by enterprise and show quickly the enterprises contributing to fixed costs and profits
- ii) in whole farm analysis the Contribution Margin is an indicator of safety margin in an operation's ability to meet fixed costs.

22) NET FARM INCOME: in agriculture, this value is normally a pre-tax figure to be allocated to operator farm family labor and return on equity.

The following worksheet pages are included for you to calculate your own example.



DEVELOPING NET FARM INCOME

Indicate a negative net change by enclosing numbers in brackets (xxx).

PART ONE: DEVELOPING TOTAL ACCRUED INCOME1) GROSS CASH INCOME

(from income tax statement) \_\_\_\_\_

2) FINAL PAYMENTS ON PRODUCTS SOLDLESS: Final payments received on last year's production \_\_\_\_\_PLUS: Anticipated final paym'ts on this year's production \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

3) DEFERRED CASH PURCHASE TICKETSPLUS: Tickets deferred to next year \_\_\_\_\_LESS: Tickets deferred from last year \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

4) CASH ADVANCES ON INVENTORYLESS: Advances Received \_\_\_\_\_PLUS: Advances Repaid \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

5) OPTIONAL VALUE OF LIVESTOCK, END OF CURRENT YEARLess Value of livestock from current year included  
in income \_\_\_\_\_6) ACCOUNTS RECEIVABLELESS: Beginning Accounts Receivable \_\_\_\_\_PLUS: Ending Accounts Receivable \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

7) INVENTORY CHANGESCrops: LESS: Beginning Inventory \_\_\_\_\_PLUS: Ending Inventory \_\_\_\_\_Livestock: LESS: Beginning Inventory \_\_\_\_\_PLUS: Ending Inventory \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

8) LIVESTOCKLESS: Livestock Purchased \_\_\_\_\_

Total of ADJUSTMENTS (2 to 8) \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

9) VALUE OF FARM PRODUCTION

Gross Profit (Value of farm production) \_\_\_\_\_



PART TWO: DETERMINING TOTAL ACCRUED EXPENSES10) TOTAL EXPENSES

(from tax return) \_\_\_\_\_

11) OPTIONAL VALUE OF LIVESTOCK, END OF PREVIOUS YEARLESS: Value of livestock from previous year \_\_\_\_\_  
included in expense \_\_\_\_\_12) ACCOUNTS PAYABLE

LESS: Beginning Accounts Payable \_\_\_\_\_

PLUS: Ending Accounts Payable \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

13) SUPPLIES INVENTORY CHANGES

PLUS: Beginning Inventory \_\_\_\_\_

LESS: Ending Inventory \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

14) LIVESTOCK

LESS: Livestock Purchased \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

15) CLEARING AND LAND IMPROVEMENTS

LESS: C.L.I. Total Cost \_\_\_\_\_

PLUS: C.L.I. Amount Allowance \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

16) DEPRECIATION

LESS: Capital Cost Allowance \_\_\_\_\_

PLUS: Management Depreciation \_\_\_\_\_

NET CHANGE THIS ADJUSTMENT \_\_\_\_\_

17) TOTAL ACCRUED EXPENSES

(Total expenses from tax return net of adjustments 11 - 16) \_\_\_\_\_





PART THREE: DEVELOPING NET INCOME18) GROSS PROFIT (Value of Farm Production) \_\_\_\_\_19) VARIABLE EXPENSES

(Complete Item #21 first)

PLUS: Total Accrued Expenses (#17) \_\_\_\_\_LESS: Total Fixed Expenses (#21) \_\_\_\_\_

TOTAL VARIABLE EXPENSES \_\_\_\_\_

20) CONTRIBUTION MARGIN(Value of Farm Production minus  
Variable Expenses) \_\_\_\_\_21) FIXED EXPENSES

Property Taxes \_\_\_\_\_

Interest on Term Loans \_\_\_\_\_

Other \_\_\_\_\_

Building \_\_\_\_\_

Repairs &amp; Maintenance \_\_\_\_\_

Improvements \_\_\_\_\_

Management Depreciation \_\_\_\_\_

TOTAL FIXED EXPENSES \_\_\_\_\_

22) NET FARM INCOME(Contribution Margin less Fixed Expenses or  
Value of Farm Production less Total  
Accrued Expenses) \_\_\_\_\_



## SECTION 3: HOW IS NET FARM INCOME USED?

The farm family will have to choose the amount of Net Farm Income to be used for current consumption versus expansion of the farm business.

Net Farm Income has to provide for:

- Family living expenses
- Income tax

After these two are paid, if anything is left over, the balance can be used for growth in the form of:

- Debt retirement (paying off bills or loans)
- New investment

New investment includes:

- Investment in better equipment or livestock
- Expansion of the farm business
- Savings

## LOAN PAYMENTS TO BE MADE

Intermediate (1 - 10 years)

---

---

---

---

Subtotal

---

---

Long-term ( over 10 years)

---

---

---

---

Total

---

Is this repayment schedule more than your farm can stand?

If it is, then there are two alternatives:

- Increase net farm income (sections 5 and 6)
- Investigate the financial structure (section 4)





## SECTION 4: FINANCIAL MANAGEMENT - NET WORTH STATEMENT

A net worth statement shows the value of assets (owns) and liabilities (owes) of the business at a particular moment in time, usually the year end. It also tells an individual what part of the business he actually owns at a given point in time, or what would be left if everything were sold and the debts paid.

NET WORTH = TOTAL ASSETS (at Market Value) - TOTAL LIABILITIES

The following information is usually included on a balance sheet:

- (a) Current assets - must include inventories of feed, crops, livestock supplies, accounts receivable (value of things sold for which money has not yet been received), in addition to regular current assets on cash basis systems.
- (b) Intermediate assets - includes machinery and equipment, breeding livestock
- (c) Fixed or long-term assets - land and buildings.
- (d) Current liabilities - must include accounts payable (value of things bought but not paid for) and the current year's payments on loan principal (excluding interest).
- (e) Intermediate liabilities - loans of 1-10 years (minus the current portion).
- (f) Long-term liabilities - loans of more than 10 years (minus the current portion).
- (g) Owner's equity - the difference between the value of all farm assets and the amount owed to lenders. This share of the business actually belongs to the owner(s).
- (h) Working capital = current assets - current liabilities

Certain ratios, called financial indicators, can be derived from the net worth statement.

### Leverage

Financial leverage is the relationship between debt and equity in the farm business. The leverage ratio reflects the overall financial risk of your farm business to the creditors. The higher the ratio, the larger the share creditors have in your farm's assets. Leverage is calculated:

$$\frac{\text{TOTAL LIABILITIES}}{\text{NET WORTH}} = \text{LEVERAGE RATIO}$$

Lending institutions usually look at leverage to see how far you are exposed already and how risky it is to lend you additional funds. A farmer or

rancher in a 1 to 1 leverage position is in a half and half partnership with his lender. For every dollar of assets on the farm, 50¢ is owned by the lender(s) and 50¢ by you. It is safest to keep the leverage ratio near the .50 to .75 level; anything above that is risky. Most farmers will have to forego rapid growth to avoid being exposed to disruptions in their farm production or marketing possibilities.

Any farmer who is highly leveraged probably is experiencing liquidity problems now. Liquidity measures a farmer's ability to pay expenses and make payments as they come due. To measure liquidity, we compare current assets with current liabilities:

$$\frac{\text{CURRENT ASSETS}}{\text{CURRENT LIABILITIES}} = \text{LIQUIDITY RATIO}$$

Generally, a reasonable current ratio is 2:1. If an operation has a regular cash flow (dairy, hogs), this ratio may be slightly lower. If the cash flow is more seasonal (crops, cow-calf), the ratio should probably be higher to provide some insurance against risk. If it is low, the operator may have to consider alternatives such as crop insurance, refinancing, or any other alternatives he can think of. A 3 to 1 ratio may be more satisfactory. If your liabilities are greater than the assets, you should consider yourself lacking liquidity and become very concerned about your finances to avoid voluntary or involuntary liquidation.

Another way to check your operations' liquidity is to measure your farm's current debt ratio, that is calculating the debt structure of your farm operation between current and total liabilities.

$$\frac{\text{CURRENT LIABILITIES}}{\text{TOTAL LIABILITIES}} = \text{CURRENT DEBT RATIO}$$

The current debt ratio will show what portion of the total farm debt must be repaid within the next year. A ratio of .40 indicates that 40% of your debt has to be repaid over the coming 12 month period. Ratios of .15 to .20 are usually considered safe. Ratios above .20 may indicate that there are or will be liquidity problems, and that there is room for some refinancing in order to stretch out the repayment period.

### Solvency

Liquidity measures the short term financial ability of a farm business, whereas we use the term solvency when we talk about long-term financial

strength. The solvency concept measures the ability of your operation to pay off all debts if you wanted or were forced to sell out and totally liquidate your business. The leverage ratio usually measures the amount of debt against the farm's assets, but we have two additional ratios to measure your farm's solvency. The net capital ratio relates the operation's assets to total liabilities. It indicates the ability of the farm to cover all debts with the equity value:

$$\frac{\text{TOTAL ASSETS}}{\text{TOTAL LIABILITIES}} = \text{NET CAPITAL RATIO}$$

Your lender usually likes to see you own about three dollars of assets for each dollar you owe somebody else.

The next solvency ratio is the equity-value ratio. It shows the equity you have in your business in relation to the value of all farm assets:

$$\frac{\text{NET WORTH}}{\text{TOTAL ASSETS}} = \text{EQUITY-VALUE RATIO}$$

This ratio is valuable in measuring your businesses' financial progress over the years it has been in operation.

The ratio indicates what percentage of farm assets are paid for, and what advances or retreats you have made in adding to your equity position. It is important to compare this ratio with the ratios of preceding years to obtain maximum insight into the changing financial structure of your farm business, and to know what direction the ratios are taking to foresee any possible problems in need of attention.

A net worth worksheet is provided on page 4.3 for you to make your own calculations.





## NET WORTH STATEMENT WORKSHEET

ASSETS	LIABILITIES
<b>CURRENT:</b>	<b>CURRENT:</b>
Cash on hand _____	Notes payable _____
Bank deposits _____	Accounts payable _____
Accounts receivable _____	Intermediate debt due _____
Grain & roughage _____	within 12 Months _____
Market livestock _____	Long-term debt due _____
Farm supplies _____	within 12 Months _____
Other _____	Rent _____
_____	Land taxes _____
_____	Other _____
<b>TOTAL CURRENT</b> _____	<b>TOTAL CURRENT</b> _____
<b>INTERMEDIATE:</b>	<b>INTERMEDIATE (1-10 Years)</b>
Breeding livestock _____	(Less amount due within
Machinery _____	12 Months) _____
Other _____	Notes payable _____
_____	Livestock _____
_____	Machinery _____
_____	Car _____
_____	Other _____
<b>FIXED:</b>	<b>LONG-TERM:</b>
Buildings _____	(Less amount due within
Land owned _____	12 Months) _____
Other _____	Building loans _____
_____	Land mortgages _____
_____	Other long-term loans _____
_____	_____
<b>TOTAL FARM ASSETS (\$)</b>	<b>TOTAL FARM LIABILITIES (\$)</b>
<b>SUMMARY</b>	
<b>TOTAL FARM ASSETS</b> _____	\$ _____
<b>(-) TOTAL FARM LIABILITIES</b> _____	\$ _____
<b>FARM NET WORTH</b> _____	\$ _____
<b>NON-FARM &amp; PERSONAL ASSETS</b> _____	\$ _____
<b>(-) NON-FARM &amp; PERSONAL LIABILITIES</b> _____	\$ _____
<b>OTHER NET WORTH</b> _____	\$ _____
<b>TOTAL NET WORTH</b>	\$ _____



## SECTION 5: ANALYSIS OF THE COMPONENTS OF NET FARM INCOME

## Price

- Marketing
- Quality

## Quantity

- Productivity
- Size

Value of production is the total value of all produce raised on the operator's farm during a year. It is the value of what the farm actually produced in the way of bushels of grain, pounds of beef, etc.

$$\text{VALUE OF PRODUCTION} - \text{COSTS} = \text{NET FARM INCOME}$$

There are several components to this equation, all of which can be examined if Net Farm Income is not at a level the farmer wants. Value of production could be increased. Costs could be lowered. The end result could be a net farm income more in line with the farmer's expectations. Generally, if net farm income is less than 35 % of value of production, costs should be looked at first. If not, look at value of production first.

If value of production appears to be low, the following should be looked at: ● price

- quantity

This is because  $\text{VALUE OF PRODUCTION} = \text{PRICE} \times \text{QUANTITY}$ .

PRICE - Price is affected primarily by marketing alternatives and quality.

Marketing - In evaluating marketing, the first question is: Did you receive at least an average price for the produce over the past year? An examination of your tax statement of records can determine this. It is important to calculate the average price, as it is human nature to remember only highs and lows.

If the average price is lower than the district average, attempt to find out why. Was it because of low grades, poor marketing practices, or something else? Depending on the enterprise, ways to increase marketing information could be suggested such as:

- Feed Grains - Alternatives available for Marketing, CWB, Open Market, Feeders, Producer Cars, etc.
- Hogs - Forward Contracting
- Oilseeds - Forward Contracting, Hedging, etc.

These are just a few specific ideas for improving marketing information and performance. Many more are available. You, the operator, should always try to

## 5.1

make effective use of marketing information to determine the outlook for the products. This information is necessary in order to permit you, the farmer, to make knowledgeable marketing decisions.

Following is a benchmark sheet that can be used for calculations.

ANALYSIS OF MARKETING - BENCHMARKS

	Open Market Average Grain Prices 1982	Average Price Received
CROPS		
Wheat 3 Red	<u>\$3.56 per bushel</u>	<u>                    </u>
Oats 1 Fd	<u>\$1.48 per bushel</u>	<u>                    </u>
Barley 1 Fd	<u>\$2.22 per bushel</u>	<u>                    </u>
Rye 2 CW	<u>\$3.29 per bushel</u>	<u>                    </u>
Flax 1 CW	<u>\$7.80 per bushel</u>	<u>                    </u>
Rapeseed 1 CR	<u>\$6.56 per bushel</u>	<u>                    </u>
Hay	<u>\$70.00 per ton</u>	<u>                    </u>
Other	<u>                    </u>	<u>                    </u>
Other	<u>                    </u>	<u>                    </u>
HOGS		
Market Hogs (Index 100)	<u>\$82 per cwt (dressed)</u>	<u>                    </u>
Feeders (100 lbs +)	<u>\$73 per cwt (live)</u>	<u>                    </u>
BEEF		
Steers (fat) A1	<u>\$72 per cwt</u>	<u>                    </u>
Heifers (fat) A1	<u>\$68 per cwt</u>	<u>                    </u>
Feeder steers      Good	<u>\$73 per cwt</u>	<u>                    </u>
Feeder heifers     Good	<u>\$66 per cwt</u>	<u>                    </u>
Heifer calves      Good 400-500 lbs.	<u>\$66 per cwt</u>	<u>                    </u>
Steer calves        Good 500-600 lbs.	<u>\$76 per cwt</u>	<u>                    </u>

Questions to be answered: Were average prices or better received?

If not, why?

Can changes be made to realize higher prices?





## Quality

The quality of an operator's produce can be determined by grades. Higher grades may be achieved by improved management practices such as:

- \* Better seed
- \* Spraying
- \* High quality breeding stock
- \* Grain drying
- \* Better management - knowing what to do for specific enterprises

## ANALYSIS OF QUALITY OF PRODUCT SOLD - BENCHMARKS

	AVERAGE PROVINCIAL QUALITY (Grade)	QUALITY OF YOUR PRODUCTS
CROPS		
Wheat	#2 & #3 CW Red Spring	
Oats	#1 FEED	
Barley	#2 CW 6 ROW	
Flax	#1 CANADA	
Canola	#1 CANADA	
Hay	FAIR QUALITY	
HOGS		
Market hogs (Index)	103.00	
BEEF		
Slaughter steers (Grade)	A1, A2	
Heifers (Grade)	A1, A2	



QUANTITY

Quantity is a function of both size and productivity.

Productivity

This is usually measured in standard units such as:

- \* Yield/acre
- \* Calving percentage, weaning percentage
- \* Hogs marketed per sow
- \* Pounds of milk sold per cow
- \* Lambing percentage
- \* Average daily gain for feeder cattle

If these figures do not compare favorably with district or regional averages, numerous management practices could be suggested. Two of the many management options are record of performance (ROP) for beef cattle and dairy herd improvement (DHI) for dairy cattle. These may help you identify the problem areas.

Other Management options are:

- Dairy record of performance (ROP)
- Sheep record of performance (ROP)
- Swine record of performance (ROP)
- Canfarm records system
- Crop production records
- Computerized record keeping systems





PRODUCTIVITY BENCHMARKS

	Provincial Average 1982 Average/Acre	Your Average
CROPS (Yield/Acre)		
Wheat	<u>32.9 bushels</u>	<u>                    </u>
Oats	<u>49.5 bushels</u>	<u>                    </u>
Barley	<u>44.0 bushels</u>	<u>                    </u>
Rye	<u>31.7 bushels</u>	<u>                    </u>
Flax	<u>20.0 bushels</u>	<u>                    </u>
Rapeseed (Canola)	<u>22.2 bushels</u>	<u>                    </u>
Hay	<u>1.74 tons</u>	<u>                    </u>
HOGS		
Hogs marketed/sow/year*	<u>14.8</u>	<u>                    </u>
BEEF		
Calves weaned (per cent)**	<u>75%</u>	<u>                    </u>
FEEDER CATTLE		
Average daily gain	<u>Start 1.50-1.75 lb</u> <u>Finish 2.75-3.5 lb</u>	<u>                    </u>
SHEEP		
Lambing (per cent)**	<u>                    </u>	<u>                    </u>
DAIRY COWS		
Lb of milk/sold/cow/yr**	<u>6064 kg/13341 lb</u>	<u>                    </u>

\* Calculation:

\* Calculated by dividing the total hogs marketed by the average number of sows for the year.

$$\frac{\text{Average Weight When Animals Sold} - \text{Average Weight When Put on Feed}}{\text{Days on Feed}}$$

\*\* Calculated by dividing total calves or lambs weaned by the number of cows or ewes exposed.

\*\* Calculate by dividing Total CWT Sold by Average number of cows in herd (milking and dry).



Size

Size can be measured by several yardsticks:

- Number of productive units - acres, cows, sows, feeders, etc.
- Capital investment in the enterprise
- Productive man work units (PMWUs)

## LABOR AVAILABLE

<u>TYPE OF LABOR</u>	<u>TOTAL MONTHS OF FARM WORK</u>
Yourself or operator	_____ months
Your family	_____ months
Hired help	_____ months
TOTAL MONTHS OF LABOR ON FARM	_____ months

Productive man work unit (PMWU) - is the average amount of productive work accomplished by one man, under average conditions, in a normal (8 hour) working day (26 normal working days per month).

For example, if there were 2,400 hours of productive man work units required to operate a farm for a year, then 2 people could do the work with 1,200 PMWUs accomplished by each person.

Man equivalents - the number of people it would take to do the work on your farm for a specific amount of time e.g., 16 months of work divided by 12 = 1.33 people to do the work in one year.

On your farm you had a total of \_\_\_\_\_ months of labor, which, divided by 12, equals \_\_\_\_\_ man equivalents. Therefore, productive man work units accomplished per man on your farm is the total productive man work units \_\_\_\_\_ divided by the man equivalents of labor used on your farm. This comes to \_\_\_\_\_ productive man work units per man.



TABLE OF PRODUCTIVE MAN WORK UNITS

LIVESTOCK ENTERPRISE		* UNITS	PMWU Per ANIMAL	TOTAL PMWU
DAIRY	Bulls	X	9.00 =	
	Cows	X	9.00 =	
	Heifers over 1 year	X	2.50 =	
	Calves	X	1.25 =	
BEEF	Bulls	X	1.50 =	
	Cows	X	1.50 =	
	Heifers over 1 year	X	.83 =	
	Calves	X	.42 =	
FEEDER CATTLE	Steers & heifers	X	.15CWT= GAIN	
HOGS	Boars	X	1.75 =	
	Brood sows	X	1.75 =	
	Market hogs	X	.175/ CWT GAIN	
SHEEP	Rams	X	.80 =	
	Ewes	X	.80 =	
	Market lambs	X	.175/ CWT GAIN	
POULTRY	Hens	X	.18 =	
	Capons or pullets raised	X	.09 =	
	Broilers	X	.05 =	
	Turkeys for laying	X	.50 =	
	Turkey poults or goslings raised	X	.25 =	
CROP ENTERPRISE		* UNITS	PMWU per ACRE	TOTAL PMWU
General and oilseed crops		X	.45 =	
Hay, greenfeed, silage		X	.60 =	
Hay, two cuts		X	.90 =	
Pasture		X	.15 =	
Canning corn		X	3.50 =	
Canning & shelled peas		X	2.00 =	
Sugar beets		X	6.00 =	
Canning beets, carrots, turnips & potatoes		X	6.00 =	
Beans, cucumbers, tomatoes		X	9.00 =	

\*Units - is the number of acres, animals, etc.



Labor efficiency can usually be increased by having bigger enterprises in a more specialized or larger farm operation. This makes economical the purchase of more labor saving equipment. Chore routines, field and building arrangements also play an important part in job planning to avoid repetition or missing some areas altogether. On the other hand, an extremely high labor output per man may merely be the result of work and management spread too thinly per acre and animal, resulting in low crop and livestock yields. Above average PMWU per man, accompanied by higher than average crop and animal yields, indicates true labor efficiency.

There is room for much variation in individual judgment in determining the optimum size of an operation. It depends greatly on the managerial capabilities of the operator and it also depends on whether enterprises make the best use of the producer's time, such as combining beef feeder operations with raising grains.

#### SIZE BENCHMARKS BY REGION - 1981

REGION	1	2	3	4	5	6
CROPS						
Total Cultivated Acres	831	904	657	715	441	733

Source: 1981 Census of Agriculture for Alberta

SIZE BENCHMARKS

	REGIONAL AVERAGE	YOUR FARM
CROPS		
Cultivated acres	_____	_____
Total investment	_____	_____
PMWU	_____	_____
BEEF		
Number of cows or feeders	_____	_____
Total investment	_____	_____
PMWU	_____	_____
HOGS		
Number of sows or feeders	_____	_____
Total investment	_____	_____
PMWU	_____	_____
OTHER		
	_____	_____
	_____	_____
	_____	_____
TOTAL PMWU	_____	_____



## SECTION 6: ANALYSIS OF THE COMPONENTS OF COSTS

There are two different types of costs - Fixed Costs

- Variable Costs

FIXED COSTS are those which do not vary with the amount of production during the year. They include things such as depreciation, taxes, insurance, etc.

As a rule, fixed costs should be less than 50 per cent of the total costs. If they are greater than 50 per cent it usually indicates that:

- The facility (building or equipment) is more expensive than its productive value, or
- The facility is not being fully utilized for the purpose it was intended.

E.g., a half-empty hog barn or feedlot, a combine used only a few hours per year.

There are two main benchmarks used to analyze fixed costs:

- capital turnover
- investment costs per unit of production

$$\text{CAPITAL TURNOVER} = \frac{\text{TOTAL ASSETS}}{\text{VALUE OF PRODUCTION}}$$

Capital turnover is an indicator of the productivity of investment. In general, if capital turnover takes longer than four years, it indicates the value of production is not large enough compared to total investment. This can be improved by increasing the value of production. Capital turnover also varies for different enterprises. Historically, dairy, hog feeder and feeder cattle have lower capital turnovers than cow-calf, hog weaner and crops. Attached is a page of provincial averages.

Investment costs per unit of production are also valuable. They are not always easily obtainable. However, we have enclosed the averages that are available.

AVERAGE CAPITAL INVESTMENT PER UNIT OF PRODUCTION BASED ON MOST RECENTLY  
PUBLISHED CRD'S AT JUNE OF 1983

			SIZE OF OPERATION <u>ACRES</u>	\$ INVESTMENT <u>PER UNIT</u>
*CROPS (Land, Buildings & Equipment)				
<u>CRD #</u>				
260	Region 1	Southern (Spring Coulee)	2000	NA
219	Region 2	South Central (Three Hills)	1000	1514/acre
231	Region 3	North Central (Daysland - rural)	1000	973/acre
234	Region 3	North Central (Innisfail-urban influence)	1000	1833/acre
207	Region 4	North East (Wainwright)	1000	744/acre
211	Region 5	North West (Legal)	615	1132/acre
244	Region 6	Peace River (Fairview)	1200	625/acre

\*\*CROPS (Equipment Only)

<u>CRD #</u>				
260	Region 1	Spring Coulee	2000	195/acre
219	Region 2	Three Hills	1000	284/acre
231	Region 3	Daysland (rural)	1000	150/acre
234	Region 3	Innisfail (urban influence)	1000	290/acre
207	Region 4	Wainwright	1000	148/acre
211	Region 5	Legal	615	206/acre
244	Region 6	Peace River (Fairview)	1200	316/acre

\*\*\*COW-CALF (Land, Buildings, Livestock & Equipment)

<u>CRD #</u>				
232	Region 2	High River (125 cows)	1280	9254/cow
233	Region 2	Hanna (200 cows)	4160	3577/cow

\*\*\*\*HOGS

<u>CRD #</u>				
226	Region 2	Olds		
		Farrow to finish (150 sows)	5	3544/sow
		Farrow to wean (150 sows)	5	2316/sow



FIXED COSTS BENCHMARKS

<u>Capital Turnover</u>	<u>Provincial Average*</u>	<u>Your Farm</u>
Crops	<u>4 - 5 years</u>	<u>                    </u>
Cow-calf	<u>5 - 10 years</u>	<u>                    </u>
Beef feeder	<u>3 - 6 years</u>	<u>                    </u>
Hogs	<u>3 - 6 years</u>	<u>                    </u>
Hog feeder	<u>3 - 6 years</u>	<u>                    </u>
Dairy	<u>3 - 5 years</u>	<u>                    </u>
Sheep	<u>4 - 6 years</u>	<u>                    </u>

Investment Per Unit of Production

	<u>Provincial Examples from CRD's and Cost Studies</u>	<u>Your Farm</u>
Crops	<u>\$ 500-\$1800 /Cultivated Acre</u>	<u>                    </u>
Cow-calf	<u>\$3500-\$10000 /Cow</u>	<u>                    </u>
Beef feeder	<u>\$ 17 /100 lb beef produced</u>	<u>                    </u>
Hogs	<u>\$ 67 /100 lb pork produced</u>	<u>                    </u>
Hog feeder	<u>\$ 38 /100 lb pork produced</u>	<u>                    </u>
Dairy	<u>\$ 33 /100 lb milk produced</u>	<u>                    </u>
Sheep	<u>\$113 /100 lb lamb produced</u>	<u>                    </u>

---

\*Varies considerably with the year and the operator



VARIABLE COSTS are costs that change with production. As a rule, they should be more than half of the total costs. There are two types:

- Income-stimulating costs
- Necessary costs

Income-stimulating costs should generate more income than they cost. Such costs include such things as fertilizer, seed grain and spray. While it would seem reasonable that they should be increased to the point where the income generated is just equal to the total added cost (including opportunity cost), this will be influenced by the operator's aversion to risk.

Necessary costs such as fuel, repairs and maintenance should just be sufficient to provide an acceptable and effective level of performance and no more. The lower the cost per unit of production, the better.

If income-stimulating costs are too low or variable costs too high, the following are some of the areas to be investigated:

- Fertilizer use - are optimum rates utilized?
- Land use - what percentage of cultivated acreage is in summerfallow?
- Seed use - is high quality seed used?
- Weed control - is the input being used to the optimum level?
- Feed use - is high quality feed used? Is feed wasted? Are rations balanced and at least cost?

No benchmarks are available for this section. Experience will be a definite asset in analyzing this section.

### CONTRIBUTION MARGIN CONCEPT

For managing the modern single or multi-enterprise farm in Alberta today, there is an almost overwhelming amount of information available at an increasingly complex level. Farm managers apply management theory as far as possible given the many constraints.

The distinction between fixed and variable costs as presented in this section is at the core of the contribution margin concept, and it is valuable because first, the applications are so diverse and important, and second, it is a concept that simplifies complex analysis.

The contribution margin measures the difference between output from the enterprise and the variable costs incurred in producing that output. The remainder is what is left to contribute to fixed costs and profit.

A very simple example can be used to illustrate the concept. Consider our example farm from Section Two producing crops and cattle only. Variable costs are those that can be traced back to a specific enterprise and are variable according to our definition. Fixed costs are the same over the time period and the range of production considered and may not be so easily traced to a specific enterprise.

	\$	\$	\$
	<u>Total Farm</u>	<u>Crops</u>	<u>Beef</u>
Value of Production	70,621	45,864	27,757
Less: Variable costs	36,410	28,230	8,180
Contribution margin	34,211	17,634	16,577
Less: Fixed costs	42,039		
Net Income	(7,828)		

Crops contribute \$17,364 to fixed costs and profit, beef \$16,577. Where it is possible to work in common units, receipts and variable costs are often calculated in a per unit basis and fixed costs left as a total.

#### Benefits

One of the many uses of the contribution margin concept is in assessing adjustments to the production plan. It is essential to keep a constant and critical eye on the production plan to assess the need for possible changes utilizing the contribution margin approach. The following rules may be applied:

1. Improving contribution margins within existing enterprises via production technology improvements or marketing strategies to reduce variable costs.
2. Substituting at the margin; changing the production plan to more resources into enterprises yielding higher contribution margins.
3. Reducing fixed costs.
4. Adding to the economic base of the total farm or an enterprise.

#### Precautions

The contribution margin is a valuable indication of efficiency within an enterprise or a particular farm. Because resource use varies between farms, however, inter-farm comparisons can be dangerous. Neither does the contribution margin approach displace the partial budget in assessing the profit potential of total farm changes (as this method analyses changes in all costs).

### Net Margins

Contribution margins have gone a long way to simplifying the approach to production plan decisions faced by the farm manager. They tell an important part of the story, but again only part of the story. Managers wishing to do some analysis of fixed costs can go a step further to the net margin.

	Enterprise	Per Acre
Receipts	xxxx	xxxx
- Variable costs	xxx	xxx
= Contribution margin	xxx	xxx
- Easily allocatable Fixed costs	xx	
= Net Margin	xx	

Do not break  
fixed costs  
in per unit  
basis

### Net Margins

1. Indicate where fixed costs are being incurred, and should the enterprise be discontinued which fixed costs will be eliminated as overhead to the total farm. This is different than shifting resources among enterprises.
2. Indicate how overall farm profit is built up.

The net margin can be calculated by removing available fixed costs to gain further information.





## CONCLUSION

## Priority in Problem Solving:

## 1. PRODUCTIVITY

Increasing productivity of present resource bases is the first step towards increasing income. Higher yields, greater weaning percentages, higher average daily gains all contribute directly to income.

## 2. MINIMIZE NECESSARY COSTS

Don't waste fuel, do shop around for parts, make repairs yourself. These also keep necessary costs low.

## 3. EXPLOIT INCOME-STIMULATING COSTS

Make sure you are using enough fertilizer. Spray weeds, control wild oats. This will involve spending money; however, it is usually well worth it in the end.

## 4. ENSURE QUALITY IS AVERAGE OR ABOVE

Better grades always get better prices. It is very important to maintain quality production.

## 5. INCREASE SIZE

This means expanding your farm either through more land or more livestock. It usually involves a lot of money and should be studied carefully before implementing.

IN OTHER WORDS - GET BETTER BEFORE BIGGER





N.L.C. - B.N.C.



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